



# Transmission Expansion Advisory Committee (TEAC) Recommendations to the PJM Board

PJM Staff White Paper

PJM Interconnection  
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## I. Executive Summary

On February 15, 2023, the PJM Board of Managers approved changes to the Regional Transmission Expansion Plan (RTEP), totaling a net increase of \$644.72 million for baseline projects and network project updates, to resolve baseline reliability criteria violations and address changes to existing projects.

Since then, PJM has identified new baseline reliability criteria violations, and the transmission system enhancements needed to solve them, at an estimated cost of \$101.50 million. Additionally, PJM is recommending the cancellation of \$186.95 million in previously identified baseline upgrades. Altogether, the changes result in an overall RTEP net decrease of approximately \$85.45 million. With these changes, RTEP projects total approximately \$42,109.10 million since the first Board approvals in 2000.

PJM sought Reliability and Security Committee consideration and full Board approval of the RTEP baseline projects summarized in this white paper was. On April 4, 2023, the Board approved the addition of RTEP baseline projects as well as other changes to the RTEP as summarized in this paper.

## II. Baseline Project Recommendations

A key dimension of PJM's RTEP process is baseline reliability evaluation, which is necessary before subsequent interconnection requests can be analyzed. Baseline analysis identifies system violations to reliability criteria and standards, determines the potential to improve the market efficiency and operational performance of the system, and incorporates any public policy requirements. PJM then develops transmission system enhancements to solve identified violations and reviews them with stakeholders through the Transmission Expansion Advisory Committee (TEAC) and Subregional RTEP Committees prior to submitting its recommendation to the Board. Baseline transmission enhancement costs are allocated to PJM responsible customers.

## III. Baseline Reliability Projects Summary

A summary of baseline projects with estimated costs equal to or greater than \$10 million is provided below. A complete listing of all recommended projects and their associated cost allocations is included in Attachment A (allocations to a single zone) of this white paper.

### A. PSEG Transmission Zone

- Baseline project b3757 – Mount Holly-Medford: \$101.50 million

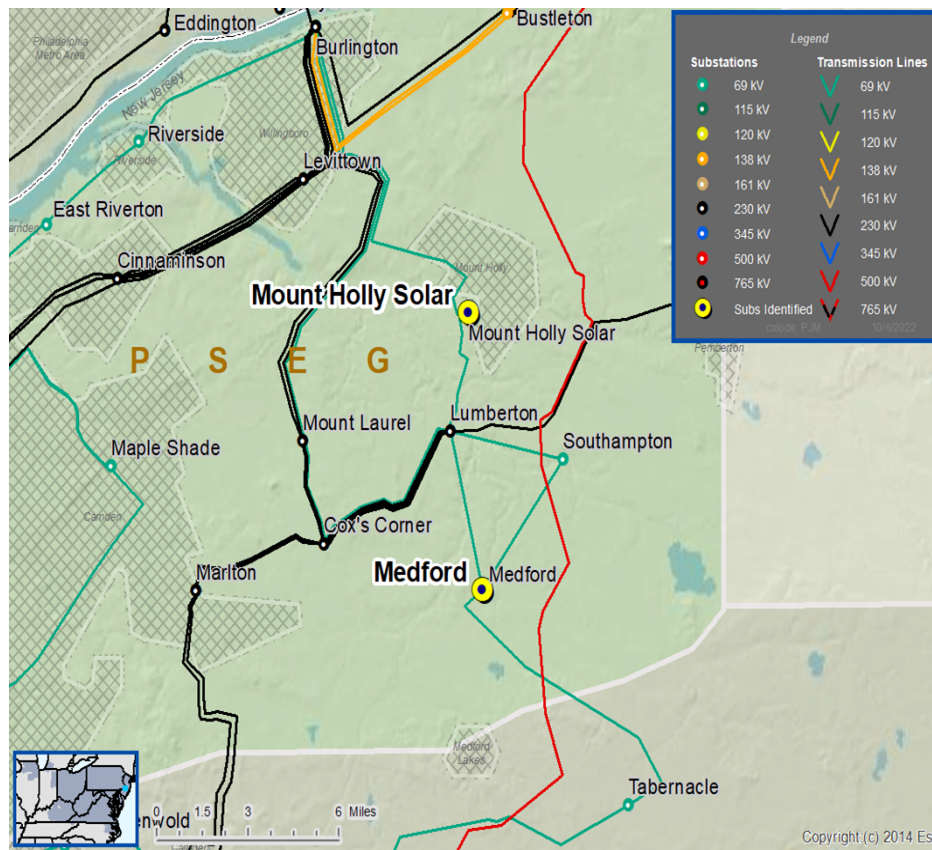
## B. Baseline Reliability Project Details

### Baseline Project b3757: Mount Holly-Medford 230/69kv Transformer Construction

#### PSEG Transmission Zone

In 2027 RTEP summer case, there were multiple voltage drop violations at Medford and South Hampton 69 kV stations for several N-1-1 contingencies.

Map 1. b3757 – Mount Holly-Medford



The recommended solution is outside of the Mount Holly and Medford substations. Convert existing Medford 69 kV straight bus to seven-breaker ring bus, and construct a new 230/69 kV transformer at Cox’s Corner and a new 69 kV line from Cox’s Corner to Medford. The estimated cost for this project is \$101.5 million.

## IV. Transmission Owner Criteria Projects

Of the \$101.50 million of new recommended baseline transmission system enhancements, all of the costs are driven by transmission owner Form No. 715 planning criteria.

## V. Changes to Previously Approved Projects

### Cancellations

The following cancellations with estimated costs equal to or greater than \$10 million are recommended:

#### FirstEnergy Transmission Zone

The following listed baseline projects were initially driven by analysis stemming from FirstEnergy’s nuclear and coal deactivation notices. Davis Besse, Perry 1, and Beaver Valley 1 & 2 withdrew the deactivation requests, and the subsequent analysis determined that the following FirstEnergy baseline projects were no longer needed. However, the base cases used to perform New Services Queue studies included those baseline projects. As a result, the status of those baseline projects were put on hold. Subsequent Interconnection Analysis and Interconnection Projects confirmed that the listed FirstEnergy baseline projects are no longer needed for New Services Queues.

Upgrade ID	Description	Cost Estimate (\$M)	TO	Required In-Service Date
<b>b3011.1</b>	Construct new Route 51 substation and connect 10-138 kV lines to new substation.	\$36.34	APS	6/1/2021
<b>b3012.1</b>	Construct two new 138 kV ties with the single structure from APS’s new substation to DUQ’s new substation. The estimated line length is approximately 4.7 miles. The line is planned to use multiple ACSS conductors per phase.	\$23.10	APS	6/1/2021
<b>b3012.3</b>	Construct a new Elrama-Route 51 138 kV No.3 line: reconductor 4.7 miles of the existing line, and construct 1.5 miles of a new line to the reconducted portion. Install a new line terminal at APS Route 51 substation.	\$18.10	APS	6/1/2021
<b>b3070</b>	Reconductor the Yukon-Route 51 No. 1 138 kV line (8 miles), replace the line drops, relays and line disconnect switch at Yukon 138 kV.	\$10.00	APS	6/1/2022
<b>b3071</b>	Reconductor the Yukon-Route 51 No. 2 138 kV line (8 miles) and replace relays at Yukon 138 kV.	\$10.00	APS	6/1/2022
<b>b3072</b>	Reconductor the Yukon-Route 51 No. 3 138 kV line (8 miles) and replace relays at Yukon 138 kV.	\$10.00	APS	6/1/2022
<b>b3077</b>	Reconductor the Franklin Pike-Wayne 115 kV line (6.78 miles).	\$11.40	PENELEC	6/1/2022

## **VI. Cost Allocation**

Cost allocations for recommended projects are shown in Attachment A (for allocation to a single zone).

Cost allocations are calculated in accordance with Schedule 12 of the Open Access Transmission Tariff (OATT). Baseline reliability project allocations are calculated using a distribution factor methodology that allocates cost to the load zones that contribute to the loading on the new facility. The allocations will be filed at FERC 30 days following approval by the Board.

## **VII. Board Approval**

The PJM Reliability and Security Committee is requested to endorse the additions and changes to the RTEP proposed in this white paper and recommends to the full Board for approval the new project and cancellations of existing RTEP projects as detailed in this white paper. The RTEP is published annually on PJM's website.

## Attachment A – Reliability Project Single-Zone Allocations

Upgrade ID	Description	Cost Estimate (\$M)	TO	Cost Responsibility	Required In-Service Date
b3757	Convert existing Medford 69 kV straight bus to seven-breaker ring bus, and construct a new 230/69 kV transformer at Cox's Corner and a new line from Cox's Corner to Medford.	\$101.50	PSEG	PSEG	6/1/2027